

REMARKS:

This submission is filed along with a request for continued examination (RCE) and is a full and complete response to the Office action dated December 30, 2009. Favorable reconsideration of the claims is respectfully requested.

REGARDING THE CLAIMS:

Claims 36-55 are pending in the Application. Claims 36 and 46 are amended with this submission, and find support in the application at least in paragraphs 50-51.

Currently, claims 38-45 and 48-55 are objected to but are indicated to be allowable if re-written in independent form. Claims 36-37 and 46-47 stand rejected.

IN RESPONSE TO THE OFFICE ACTION:

REJECTION UNDER 35 U.S.C. § 103 – AINE IN VIEW OF KATO :

Claims 36 and 46 stand rejected under 345 USC §103(a) as being unpatentable over Aine, US 3,903,694 (hereinafter “Aine”) in view of Kato et al., US 5,953,907, (hereinafter “Kato”).

Applicants respectfully submit that the cited references taken alone or in combination do not disclose, teach or suggest the presently amended claims. With this submission Applicants have amended claims 36 and 46 to recite that the wall structure comprises a “porous material” which provides selective passage of the gas component “based on molecular size.” Applicants note this amendment is fully supported in the specification in at least paragraphs 50-51.

As described in the specification, the walls can be constructed of a material with “pores” or “ducts.” Such material may be for example, a zeolite. Such material includes a molecular structure that can be utilized in order to separate various gas components based on differences in size and molecular form in these gas components. This can be seen with reference to Figs. 2 and 3, illustrated for convenience below:

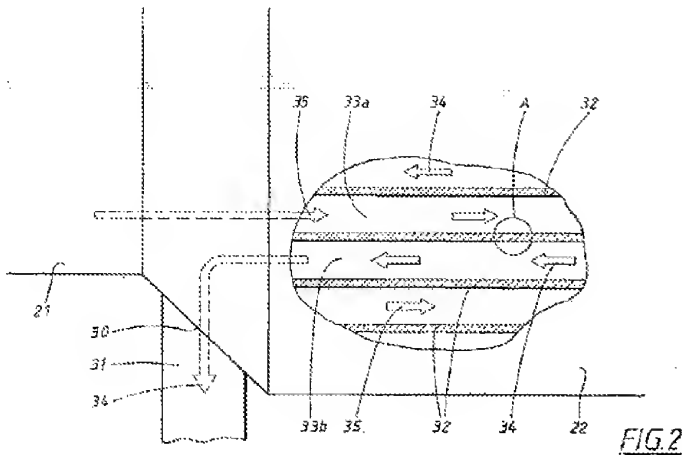


FIG. 2

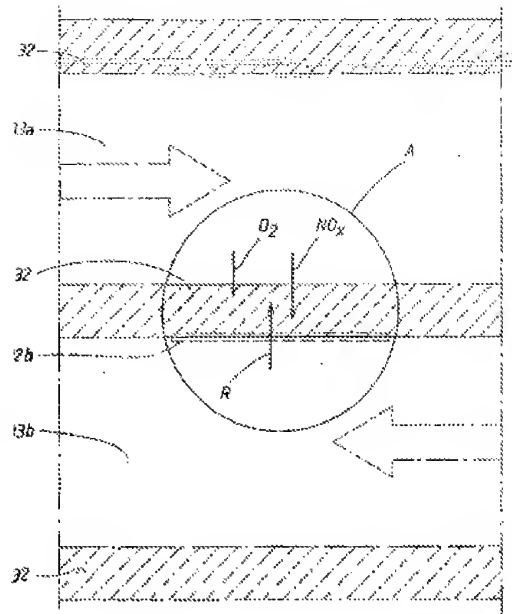


FIG. 3

Accordingly, in the embodiment shown in the figures above, a suitable porous material can be employed to allow passage of NO_x compounds in the exhaust flow through the respective wall 32, while passage of oxygen is considerably prevented. *See Application, paragraph 50-51.* The "pores" or "ducts" are sized to allow oxides of nitrogen to pass with a comparative high rate while other gas components, for example oxygen, are allowed to pass with a comparatively low rate. Therefore, in this way the separation of molecules depending on size is illustrated.

Applicants respectfully submit that the cited references do not disclose, teach or suggest at least the limitations recited above. Furthermore, the present claims are not a mere predictable variation of the devices disclosed in the cited references. Accordingly, no prima facie case of obviousness can be established.

The Aine reference is primarily directed to the separation of smog producing constituents, namely unburned hydrocarbons, while also mentioning the possibility of separating other constituents such as SO₂, CO₂, N₂O, and NO₂. *Aine, col. 4, lines 43-45.* The purpose of separating out the unburned hydrocarbons is to feed them back to the combustion chamber of the

engine so that they may be more fully broken down and disposed of. *Aine*, col. 1, lines 56-63; col. 4, lines 12-17. Aine does not disclose a selective separation of nitrogen oxides nor the use of a porous wall to separate gas components.

Instead the Aine employs a polymer membrane which operates by causing organic gas to go into solution with the membrane material. It then diffuses from the membrane material into a stream of fresh air which is then fed back into the combustion chamber. This is disclosed in col. 4, lines 60-67:

The membrane 12 operates by causing the organic vapors to go into solution with the membrane material. The dissolved gas diffuses through the membrane 12. Permanent gases do not condense on the membrane 12. As utilized herein, entering into solution is defined as a process of condensation and then mixing of the gaseous material in the surface layers of the membrane 12

Therefore, the membrane of Aine does not separate gases by use of a porous material which selectivi based on size and form of the gas molecules. Consequently, Aine does not disclose, teach or suggest the present claims.

Further to the above, the Examiner relied on Kato for disclosing a NO_x sensor. Accordingly, Kato does nothing to resolve the deficiency in disclosure of the Aine reference. Therefore, Applicants submit that no prima facie case of obviousness can be established, and request the above mentioned rejections be withdrawn.

REJECTION UNDER 35 U.S.C. § 103 – AINE IN VIEW OF KATO AND CASEY :

Claims 37 and 47 stand rejected under 345 USC §103(a) as being unpatentable over Aine, in view of Kato, and further in view of Casey, US 5,661,973 (hereinafter “Casey”).

Applicants re-assert the arguments made above with respect to Aine and Kato. Therefore, as claims 37 and 47 depend from claims 36 and 46 respectively, Applicants submit that for at least the same reasons the above mentioned rejection should also be withdrawn. The Casey reference does nothing to remedy the deficiency of disclosure of the aforementioned references Applicants therefore submit that the claimed invention would not have been obvious at all even additionally in view of Casey.

Accordingly, for at least the above reasons, Applicants request the above mentioned rejection be withdrawn.

In view of the foregoing as well as the previous Remarks, Applicants submit that all pending claims are in condition for allowance, and timely Notice to that effect is respectfully requested.

The undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 14-1437, referencing Attorney Docket No.: 0173.019.PCUS00.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner may directly contact the undersigned by phone to further the discussion.

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June 1, 2010